

WHAT IS CLAIMED IS:

1 1. A pistol with magazine disconnect mechanism lock comprising:
2 a frame that holds a magazine;
3 a hammer pivotally mounted to the frame;
4 a sear engageable with the hammer, the sear operable to hold the hammer in a
5 cocked position and further to release the hammer from the cocked position to
6 discharge the pistol;

7 a locking member movable into and out of engagement with the sear in response
8 to removing the magazine from and inserting the magazine into the pistol, the locking
9 member engaging the sear when the magazine is removed to prevent the sear from
10 moving and releasing the hammer while held in the cocked position by the sear.

1 2. The pistol of claim 1, wherein the magazine contacts and moves the
2 locking member in a first direction to disengage the locking member from the sear when the
3 magazine is inserted into the pistol.

1 3. The pistol of claim 2, wherein the magazine breaks contact with and
2 moves the locking member in a second direction to engage the sear when the magazine is
3 removed from the pistol.

1 4. The pistol of claim 1, wherein the locking member is vertically movable
2 from a first position in which the locking member does not engage the sear to a second position
3 in which the locking member engages the sear.

1 5. The pistol of claim 1, further comprising a biasing member to bias the
2 locking member into engagement with the sear.

1 6. The pistol of claim 1, wherein the locking member is pivotally mounted
2 to the frame and movable in a pivotal manner into and out of engagement with the sear.

1 7. The pistol of claim 1, wherein the locking member further comprises a
2 mounting portion and a blade protruding outwards and forward therefrom, the mounting
3 portion containing a hole that receives a pivot pin to mount the locking member to the frame

4 and provide pivotal movement of the locking member in response to removing and inserting
5 the magazine.

1 8. The pistol of claim 7, wherein the hammer and the locking member are
2 pivotally mounted to the frame on a common pivot pin disposed laterally in the frame.

1 9. The pistol of claim 7, wherein the blade further comprises a straight
2 portion and an angled portion that laterally protrudes into the path of the magazine as it is
3 inserted into the pistol and contacts the magazine to impart movement to the locking member.

1 10. The pistol of claim 9, wherein the angled portion is disposed at an angle
2 of about 40 degrees to the straight portion.

1 11. The pistol of claim 9, wherein the angled portion contains a vertically-
2 inclined front surface to contact the magazine.

1 12. The pistol of claim 1, wherein the locking member further comprises a
2 hook configured to engage and prevent the sear from moving.

1 13. The pistol of claim 12, wherein the hook further comprises a generally
2 square-shaped recess configured to engage a complimentary square-shaped protrusion on the
3 sear.

1 14. A pistol with magazine disconnect mechanism lock comprising:
2 a frame defining an open cavity to receive a magazine;
3 a hammer pivotally mounted to the frame;
4 a trigger pivotally mounted to the frame;
5 a sear pivotally mounted to the frame and movable in response to a user pulling
6 the trigger, the sear engageable with the hammer and operable to hold the hammer in a
7 cocked position, and further operable to release the hammer from the cocked position in
8 response to pulling the trigger to discharge the pistol;
9 a pivoting locking member movable into and out of engagement with the sear in
10 response to inserting and removing the magazine from the frame cavity, the locking
11 member movable between:

12 a non-locking position in which the locking member is disengaged from the sear
13 which is freely movable when the magazine is inserted in the frame, and
14 a locking position in which the locking member engages the sear to prevent the
15 sear from moving and releasing a cocked hammer when the magazine is removed from
16 the frame.

1 15. The pistol of claim 14, further comprising a biasing member to bias the
2 locking member into engagement with the sear.

1 16. The pistol of claim 14, wherein the sear further comprises a protrusion
2 and the locking member further comprises a hook having a recess configured to receive the
3 protrusion and prevent the sear from moving.

1 17. The pistol of claim 14, wherein the locking member further comprises a
2 blade having a straight portion and an angled portion thereto that protrudes into the cavity in
3 the frame that receives the magazine, the angled portion positioned to contact the magazine
4 when it is inserted into the frame.

1 18. The pistol of claim 17, wherein the angled portion is disposed at an angle
2 of about 40 degrees to the straight portion of the blade.

1 19. The pistol of claim 14, wherein the trigger further comprises a hook and
2 the magazine further comprises a catch to engage the hook, the hook positioned to engage the
3 catch to prevent the magazine from being removed from the pistol if the trigger is partially
4 pulled rearwards.

1 20. The pistol of claim 19, wherein the hook is located on a rear surface of
2 the trigger and the catch is located on a front surface of the magazine.

1 21. A method of disabling the discharge of a pistol having a magazine and a
2 frame to receive the magazine, the method comprising:
3 inserting the magazine into the frame;
4 cocking a hammer that is pivotally mounted in the frame to strike a firing pin
5 and discharge the pistol;

6 engaging the cocked hammer with a pivoting sear to hold the hammer in
7 position, the sear being movable to release the hammer to strike the firing pin;
8 removing the magazine from the frame; and
9 moving a locking member simultaneously with removing the magazine into
10 engagement with the sear to prevent the sear from moving to release the cocked
11 hammer and discharging the pistol.

1 22. The method of claim 21, further comprising the step of reinserting the
2 magazine into the frame, and disengaging the locking member from the sear simultaneously
3 with reinserting the magazine to allow the sear to move to release the cocked hammer.